

WHAT IS CLAIMED IS:

1. A method for the recuperation of septic tank content using a mobile recuperation unit having first and second reservoirs, the content of the septic tank including sludge, supernatant and scum, said
5 method comprising:

transferring a portion of the supernatant from the septic tank to the first reservoir of the mobile recuperation unit;

transferring the remainder of the content of the septic tank into the second reservoir of the mobile recuperation unit;

- 10 filtering the supernatant; and

transferring the filtered supernatant from the first reservoir back to the septic tank.

2. The method for the recuperation of septic tank content
15 as recited in claim 1, wherein said filtering step is done during the transfer of the supernatant from the septic tank to the first reservoir of the mobile recuperation unit.

3. The method for the recuperation of septic tank content
20 as recited in claim 1, wherein said filtering step is done during the transfer of the supernatant from the first reservoir back to the septic tank.

4. The method for the recuperation of septic tank content as recited in claim 1, wherein said transferring step of the supernatant from the septic tank to the first reservoir of the mobile recuperation unit is done from the top, below the scum level, to the bottom, above the sludge level, of the septic tank.

5. The method for the recuperation of septic tank content as recited in claim 4, wherein said transferring step of the supernatant from the septic tank to the first reservoir of the mobile recuperation unit is done until the amount of suspended matter in the supernatant transferred exceeds a predetermined level.

6. The method for the recuperation of septic tank content as recited in claim 1, wherein said transfer steps are done by at least one pump.

7. The method for the recuperation of septic tank content as recited in claim 6, wherein said at least one pump includes a vacuum pump.

8. The method for the recuperation of septic tank content as recited in claim 1, wherein said filtering step is done using a filtering method selected from the group consisting of bag filtering, membrane filtering, sand filtering, cartridge filtering, centrifugal filtering and clarifying filtering.

9. The method for the recuperation of septic tank content as recited in claim 1, further comprising the step of pre-filtering the supernatant during the transfer of the supernatant from the septic tank to the first reservoir.

5

10. A system for the recuperation of septic tank content including sludge, supernatant and scum, said system comprising:

a first reservoir;

a second reservoir;

10

a bidirectional pump assembly having at least one pump suction pipe having a proximate end connected to a first port thereof; said pump assembly having a second port connected to said first reservoir and a third port connected to said second reservoir;

a filtering assembly provided between said second port and said first reservoir;

15

whereby, said bidirectional pump assembly is so controlled as to pump the supernatant from the septic tank into said first reservoir, filter this supernatant via said filtering assembly, pump the sludge and the scum to said second reservoir and pump back the filtered supernatant to the septic tank to thereby reduce the portion of the content of the septic tank remaining in the recuperation system.

20

11. The system for the recuperation of septic tank content recited in claim 10, wherein said bidirectional pump assembly further includes a fourth port connected to the bottom of said first reservoir.

25

20049365-020602

12. The system for the recuperation of septic tank content recited in claim 10, wherein said filtering assembly includes a filter selected from the group consisting of bag filters, membrane filters, sand
5 filters, cartridge filters, centrifugal filters and clarifier filters.

13. The system for the recuperation of septic tank content recited in claim 12, wherein said filter is a membrane filter and includes a continuous biodegradable filtering medium; said recuperation system
10 further comprising a shredder used to shred used portions of said biodegradable filtering medium and to place the shredded medium in said second reservoir.

14. The system for the recuperation of septic tank content recited in claim 10, wherein one of said at least one pump suction pipe has a distal end provided with a nozzle head having lateral apertures.
15

15. The system for the recuperation of septic tank content recited in claim 14, wherein said nozzle head further includes a generally conical shaped end.
20

16. The system for the recuperation of septic tank content recited in claim 10, further comprising a controller electrically connected to said bidirectional pump assembly and to said filtering assembly; said
25 controller being configured to control the operation of these assemblies.

17. The system for the recuperation of septic tank content recited in claim 10, wherein said filtering assembly includes pre-filter.

18. A system for the recuperation of septic tank content including sludge, supernatant and scum, said system comprising:

a first reservoir;

a first pump having an inlet and an outlet open to said first reservoir;

a first pump suction pipe having a proximate end connected to said inlet of said first pump;

a filtering assembly associated with said first pump suction pipe;

a second reservoir;

a second pump having an inlet and an outlet open to said second reservoir;

a second pump suction pipe having a proximate end connected to said inlet of said second pump;

whereby, a) said first pump may be so controlled as to pump the supernatant from the septic tank to said first reservoir, b) said filtering assembly may be so controlled to filter the pumped supernatant, c) said second pump may be so controlled as to pump the sludge and the scum to said second reservoir, and d) said first pump may be so controlled as to pump back the filtered supernatant to the septic tank to thereby reduce the portion of the content of the septic tank remaining in the recuperation system.

19. The system for the recuperation of septic tank content recited in claim 18, further comprising a controller electrically connected to said first and second pumps and to said filtering assembly; said
5 controller being configure to control the operation thereof.

20. The system for the recuperation of septic tank content recited in claim 19, further comprising a sensor associated with said first pump suction pipe and connected to said controller to supply
10 information about the turbidity of the pumped supernatant.

21. The system for the recuperation of septic tank content recited in claim 20, further comprising a bypass assembly controlled by said controller, said bypass assembly being so associated to said first
15 pump suction pipe as to divert the flow thereof from said first reservoir to said second reservoir upon detection of a turbidity level above a predetermined level.

22. The system for the recuperation of septic tank content recited in claim 18, wherein said filtering assembly includes a filter selected from the group consisting of bag filters, membrane filters, sand
20 filters, cartridge filters, centrifugal filters and clarifier filter.

23. The system for the recuperation of septic tank content recited in claim 22, wherein said filtering assembly further includes a pre-filter.

24. The system for the recuperation of septic tank content
5 recited in claim 18, wherein said first pump suction pipe has a distal end provided with a nozzle head having lateral apertures.

25. The system for the recuperation of septic tank content recited in claim 24, wherein said nozzle head further includes a generally conical shaped end.

10 26. The system for the recuperation of septic tank content as recited in claim 24, wherein said nozzle head further includes a floating element configured and sized to keep said lateral apertures below the level of the scum.

15 27. A system for the recuperation of septic tank content including sludge, supernatant and scum, said system comprising:

a first reservoir;

a first pump suction pipe having a proximate end connected to said first reservoir;

a second reservoir;

20 a second pump suction pipe having a proximate end connected to said second reservoir;

a vacuum pump connected to said first and second reservoirs.

a filtering assembly associated with said first reservoir;

whereby, a) said vacuum pump may be so controlled as to generate a partial vacuum in said first reservoir to pump the supernatant from the septic tank to said first reservoir, b) said filtering assembly may be so controlled to filter the pumped supernatant, c) said vacuum pump
5 may be so controlled as to generate a partial vacuum in said second reservoir to pump the sludge and the scum to said second reservoir, and d) said filtered supernatant may be returned to the septic tank via said first pump suction pipe to thereby reduce the portion of the content of the septic tank remaining in the recuperation system.

10 28. A system for the recuperation of septic tank content including sludge, supernatant and scum, said system comprising:

a first reservoir;

a second reservoir;

15 means for pumping said supernatant into said first reservoir and said sludge and scum into said first reservoir; said pumping means being configured to allow said pumping back of said supernatant into said septic tank;

means for filtering the supernatant;

20 whereby, said system is so controlled as to pump the supernatant from the septic tank into said first reservoir via said pumping means, filter this supernatant via said filtering means, pump the sludge and the scum to said second reservoir and pump back the filtered supernatant to the septic tank via said pumping means to thereby reduce the portion of the content of the septic tank remaining in the recuperation system.

13049365-02050
205020-5964051